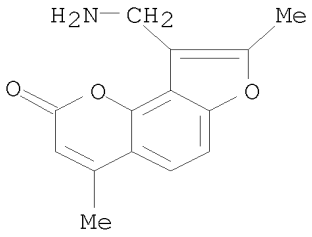
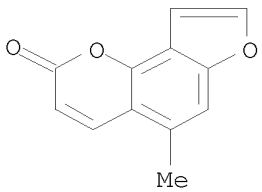
L1 ANSWER 3 OF 8 REGISTRY COPYRIGHT 2008 ACS on STN
RN 80500-62-5 REGISTRY
ED Entered STN: 16 Nov 1984
CN 2H-Furo[2,3-h]-1-benzopyran-2-one, 9-(aminomethyl)-4,8-dimethyl- (CA INDEX NAME)
OTHER NAMES:
CN 4'-Aminomethyl-4,5'-dimethylangelicin
CN 4'-Aminomethyl-4,5'-dimethylisopsoralen
MF C14 H13 N O3
CI COM
LC STN Files: CA, CAPLUS, CASREACT, TOXCENTER, USPAT2, USPATFULL



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

30 REFERENCES IN FILE CA (1907 TO DATE)
5 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
30 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L1 ANSWER 4 OF 8 REGISTRY COPYRIGHT 2008 ACS on STN
RN 73459-03-7 REGISTRY
ED Entered STN: 16 Nov 1984
CN 2H-Furo[2,3-h]-1-benzopyran-2-one, 5-methyl- (CA INDEX NAME)
OTHER NAMES:
CN 5-Methylangelicin
CN 5-Methylisopsoralen
MF C12 H8 O3
CI COM
LC STN Files: BEILSTEIN*, BIOSIS, BIOTECHNO, CA, CAPLUS, CHEMCATS, CHEMLIST, DDFU, DRUGU, EMBASE, MEDLINE, NAPRALERT, RTECS*, SPECINFO, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)

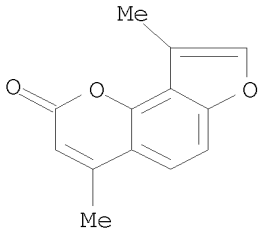


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

53 REFERENCES IN FILE CA (1907 TO DATE)
5 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
53 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L1 ANSWER 5 OF 8 REGISTRY COPYRIGHT 2008 ACS on STN
RN 22975-76-4 REGISTRY
ED Entered STN: 16 Nov 1984

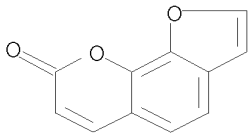
CN 2H-Furo[2,3-h]-1-benzopyran-2-one, 4,9-dimethyl- (CA INDEX NAME)
OTHER NAMES:
CN 4,4'-Dimethylangelicin
CN 4,4'-Dimethylisopsoralen
MF C13 H10 O3
LC STN Files: BEILSTEIN*, BIOSIS, CA, CAPLUS, CHEMCATS, CHEMLIST, EMBASE,
    MEDLINE, RTECS*, SPECINFO, TOXCENTER
      (*File contains numerically searchable property data)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

29 REFERENCES IN FILE CA (1907 TO DATE)
4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
29 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L1 ANSWER 6 OF 8 REGISTRY COPYRIGHT 2008 ACS on STN
RN 5768-44-5 REGISTRY
ED Entered STN: 16 Nov 1984
CN 8H-Furo[3,2-h][1]benzopyran-8-one (CA INDEX NAME)
OTHER NAMES:
CN 2-Propenoic acid, 3-(7-hydroxy-6-benzofuranyl)-, δ-lactone
CN 7-Hydroxy-6-benzofuranacrylic acid δ-lactone
CN Furo[4',5':7,8]coumarin
CN Pseudoisopsoralen
MF C11 H6 O3
LC STN Files: BEILSTEIN*, BIOSIS, CA, CAPLUS, CASREACT, TOXCENTER
      (*File contains numerically searchable property data)

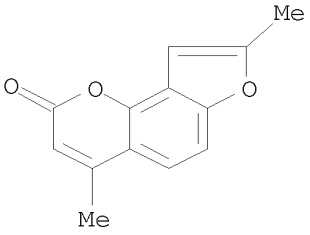


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

19 REFERENCES IN FILE CA (1907 TO DATE)
3 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
19 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L1 ANSWER 7 OF 8 REGISTRY COPYRIGHT 2008 ACS on STN
RN 4063-41-6 REGISTRY
ED Entered STN: 16 Nov 1984
CN 2H-Furo[2,3-h]-1-benzopyran-2-one, 4,8-dimethyl- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 5-Benzofuranacrylic acid, 4-hydroxy-β,2-dimethyl-, δ-lactone
    (6CI, 7CI)
OTHER NAMES:
CN 4,8-Dimethylisopsoralen
CN NSC 627260

MF C13 H10 O3
LC STN Files: BEILSTEIN*, BIOSIS, BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, EMBASE, IPA, MEDLINE, NAPRALERT, RTECS*, SPECINFO, TOXCENTER, USPAT2, USPATFULL, USPATOLD
(*File contains numerically searchable property data)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

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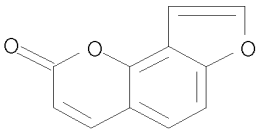
3 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
94 REFERENCES IN FILE CAPLUS (1907 TO DATE)
5 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L1 ANSWER 8 OF 8 REGISTRY COPYRIGHT 2008 ACS on STN
RN 523-50-2 REGISTRY
ED Entered STN: 16 Nov 1984
CN 2H-Furo[2,3-h]-1-benzopyran-2-one (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Isopsoralen (6CI)
OTHER NAMES:
CN 2-Propenoic acid, 3-(4-hydroxy-5-benzofuranyl)-, δ-lactone
CN Angecin
CN Angelicin
CN Angelicin (coumarin derivative)
CN Furo[2,3-h]coumarin
CN Furo[5',4':7,8]coumarin
CN NSC 404563
DR 39310-13-9
MF C11 H6 O3
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOSIS, BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CSCHEM, DDFU, DRUGU, EMBASE, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, NAPRALERT, RTECS*, SPECINFO, TOXCENTER, USPAT2, USPATFULL, USPATOLD
(*File contains numerically searchable property data)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

755 REFERENCES IN FILE CA (1907 TO DATE)
54 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
759 REFERENCES IN FILE CAPLUS (1907 TO DATE)
34 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

```
=> s angelicin
L2          55 ANGELICIN

=> d 55

L2   ANSWER 55 OF 55  REGISTRY  COPYRIGHT 2008 ACS on STN
RN   83-46-5  REGISTRY
ED   Entered STN:  16 Nov 1984
CN   Stigmast-5-en-3-ol, (3β)-  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   Nimbosterol (6CI)
CN   Stigmast-5-en-3β-ol (8CI)
OTHER NAMES:
CN   (-)-β-Sitosterol
CN   (24R)-Ethylcholest-5-en-3β-ol
CN   (24R)-Stigmast-5-en-3β-ol
CN   α-Dihydrofucosterol
CN   α-Phytosterol
CN   β-Sitosterin
CN   β-Sitosterol
CN   Δ5-Stigmasten-3β-ol
CN   22,23-Dihydrostigmasterol
CN   24α-Ethylcholesterol
CN   Angelicin
CN   Angelicin (steroid)
CN   Azuprostat
CN   Betaprost
CN   Cinchol
CN   Cupreol
CN   Harzol
CN   NSC 18173
CN   NSC 49083
CN   NSC 8096
CN   Prostasal
CN   Quebrachol
CN   Rhammol
CN   Rhamnol
CN   Sito-Lande
CN   Sitosterol
CN   SKF 14463
CN   Sobatum
CN   Stigmasterol, 22,23-dihydro-
FS   STEREOSEARCH
DR   8003-23-4, 15764-35-9, 76772-70-8, 182512-23-8
MF   C29 H50 O
CI   COM
LC   STN Files:   ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOSIS,
       BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX,
       CHEMLIST, CSCHEM, DDFU, DETHERM*, DRUGU, EMBASE, IFICDB, IFIPAT, IFIUDB,
       IPA, MRCK*, MSDS-OHS, NAPRALERT, PIRA, PROMT, PS, RTECS*, SCISEARCH,
       SPECINFO, SYNTHLINE, TOXCENTER, ULIDAT, USPAT2, USPATFULL, USPATOLD,
       VETU
         (*File contains numerically searchable property data)
     Other Sources:   DSL**, EINECS**
         (**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.
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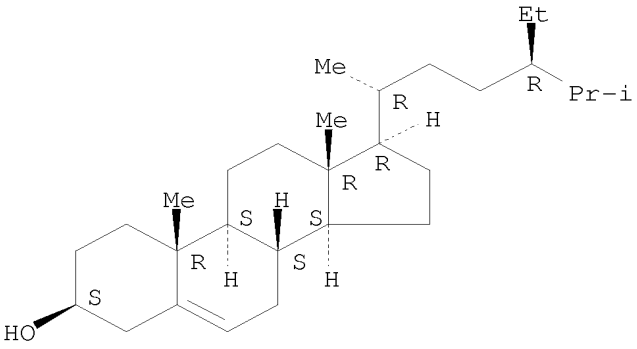

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

13643 REFERENCES IN FILE CA (1907 TO DATE)
245 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
13743 REFERENCES IN FILE CAPLUS (1907 TO DATE)
12 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> file caplus

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	31.06	31.27

FILE 'CAPLUS' ENTERED AT 17:58:50 ON 30 JUL 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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FILE COVERS 1907 - 30 Jul 2008 VOL 149 ISS 5
FILE LAST UPDATED: 29 Jul 2008 (20080729/ED)

Caplus now includes complete International Patent Classification (IPC) reclassification data for the second quarter of 2008.

Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

http://www.cas.org/legal/infopolicy.html

=> s l1 <> or isopsoralen?

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See HELP TRANSFER and HELP ANALYZE for Details

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.48	31.75

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FILE 'REGISTRY' ENTERED AT 17:59:10 ON 30 JUL 2008
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SET COMMAND COMPLETED

SEL L1 1-
L3          SEL L1 1- CHEM :      33 TERMS

SET SMARTSELECT OFF
SET COMMAND COMPLETED


COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                      12.11      43.86

FILE 'CAPLUS' ENTERED AT 17:59:10 ON 30 JUL 2008
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S L3 OR ISOPSORALEN?


           236 ISOPSORALEN?
L5        1087 L4 OR ISOPSORALEN?

=> s l5 or furocoumarin or angecin or nsc 404563
          1351 FUROCOUMARIN
          1833 FUROCOUMARINS
          2296 FUROCOUMARIN
                 (FUROCOUMARIN OR FUROCOUMARINS)
             1 ANGECIN
          4254 NSC
           778 NSCS
          4751 NSC
                 (NSC OR NSCS)
             0 404563
             0 NSC 404563
                 (NSC(W)404563)
L6        2941 L5 OR FUROCOUMARIN OR ANGECIN OR NSC 404563

=> s thalassaemia or thalassemia or e4, e5 or thalassemic or thalassaemic
           191 THALASSAEMIA
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           202 THALASSAEMIA
                 (THALASSAEMIA OR THALASSAEMIAS)
          5965 THALASSEMIA
           399 THALASSEMIAS
          6023 THALASSEMIA
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         10046 "ANEMIA (DISEASE)"/CT
          4543 THALASSEMIA/CT
          1126 THALASSEMIC
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          1163 THALASSEMIC
                 (THALASSEMIC OR THALASSEMICS)
            17 THALASSAEMIC
             1 THALASSAEMICS
            18 THALASSAEMIC
                 (THALASSAEMIC OR THALASSAEMICS)
L7       15878 THALASSAEMIA OR THALASSEMIA OR ("ANEMIA (DISEASE)"/CT OR  THALAS
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SEMIA/CT) OR THALASSEMIC OR THALASSAEMIC

=> s l6 and l7
L8 10 L6 AND L7

=> focus
PROCESSING COMPLETED FOR L8
L9 10 FOCUS L8 1-

=> d ibib abs 1-10

L9 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:120717 CAPLUS
DOCUMENT NUMBER: 140:157454
TITLE: Use of angelicin and its structural analogs for the treatment of thalassemia
INVENTOR(S): Bianchi, Nicoletta; Borgatti, Monica; Gambari, Roberto; Lampronti, Ilaria
PATENT ASSIGNEE(S): Universita' Degli Studi Di Ferrara, Italy; Associazione Veneta Per La Lotta Alla Talassemia
SOURCE: PCT Int. Appl., 18 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004012729	A1	20040212	WO 2003-IB3462	20030730
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003249472	A1	20040223	AU 2003-249472	20030730
EP 1545506	A1	20050629	EP 2003-766580	20030730
EP 1545506	B1	20080220		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
AT 386513	T	20080315	AT 2003-766580	20030730
US 20060111433	A1	20060525	US 2005-522737	20051012
PRIORITY APPLN. INFO.:			IT 2002-TO684 A	20020731
			WO 2003-IB3462 W	20030730

AB The invention describes the use of angelicin and its structural analogs for the preparation of a medicament for the therapeutic treatment of beta-thalassemia. A structural analog which is particularly preferred for this purpose is bergapten.

L9 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:177329 CAPLUS
DOCUMENT NUMBER: 148:345420
TITLE: Structure and biological activity of furocoumarins
AUTHOR(S): Gambari, Roberto; Lampronti, Ilaria; Bianchi, Nicoletta; Zuccato, Cristina; Viola, Giampietro; Vedaldi, Daniela; Dall'Acqua, Francesco
CORPORATE SOURCE: ER-GenTech, Department of Biochemistry and Molecular Biology, Section of Molecular Biology, University of Ferrara, Ferrara, 44100, Italy
SOURCE: Topics in Heterocyclic Chemistry (2007), 9(Bioactive

Heterocycles III), 265-276
CODEN: THCOA6; ISSN: 1861-9282
PUBLISHER: Springer GmbH
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB In this review we summarize the structure and biol. effects of linear and angular psoralens. These compds. exhibit very interesting biol. effects on cell cycle, apoptosis and differentiation. These mols. should be considered as promising drugs in the therapy of several diseases, including psoriasis, mycosis fungoides, cancer. In addition, pre-clin. data demonstrate a possible employment of these mols. for the treatment of β- thalassemia.

L9 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:786184 CAPLUS
DOCUMENT NUMBER: 140:157093
TITLE: Accumulation of γ-globin mRNA in human erythroid cells treated with angelicin
AUTHOR(S): Lampronti, Ilaria; Bianchi, Nicoletta; Borgatti, Monica; Fibach, Eitan; Prus, Eugenia; Gambari, Roberto
CORPORATE SOURCE: Department of Biochemistry and Molecular Biology, University of Ferrara, Ferrara, Italy
SOURCE: European Journal of Haematology (2003), 71(3), 189-195
CODEN: EJHAEC; ISSN: 0902-4441
PUBLISHER: Blackwell Publishing Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The aim of the present study was to determine whether angelicin is able to increase the expression of γ-globin genes in human erythroid cells. Angelicin is structurally related to psoralens, a well-known chemical class of photosensitizers used for their antiproliferative activity in treatment of different skin diseases (i.e., psoriasis and vitiligo). To verify the activity of angelicin, we employed two exptl. cell systems, the human leukemic K562 cell line and the two-phase liquid culture of human erythroid progenitors isolated from normal donors. The results of our investigation suggest that angelicin, compared with cytosine arabinoside, mithramycin and cisplatin, is a powerful inducer of erythroid differentiation and γ-globin mRNA accumulation of human leukemia K562 cells. In addition, when normal human erythroid precursors were cultured in the presence of angelicin, increases of γ-globin mRNA accumulation and fetal Hb (HbF) production, even higher than those obtained using hydroxyurea, were detected. These results could have practical relevance, as pharmacol.-mediated regulation of the expression of human γ-globin genes, leading to HbF induction, is considered a potential therapeutic approach in hematol. disorders, including β- thalassemia and sickle cell anemia.
REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:158569 CAPLUS
DOCUMENT NUMBER: 148:397073
TITLE: Induction of γ-globin mRNA, erythroid differentiation and apoptosis in UVA-irradiated human erythroid cells in the presence of furocoumarin derivatives
AUTHOR(S): Viola, Giampietro; Vedaldi, Daniela; Dall'Acqua, Francesco; Fortunato, Elena; Basso, Giuseppe; Bianchi, Nicoletta; Zuccato, Cristina; Borgatti, Monica; Lampronti, Ilaria; Gambari, Roberto
CORPORATE SOURCE: Department of Pharmaceutical Sciences, University of Padova, Padua, 35131, Italy
SOURCE: Biochemical Pharmacology (2008), 75(4), 810-825
CODEN: BCPCA6; ISSN: 0006-2952
PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal
LANGUAGE: English

AB Psoralens, also known as furocoumarins, are a class of photosensitizers largely used in the therapy of various skin diseases. In this study we have evaluated the combined effects of UVA irradiation and furocoumarins derivs. on (a) erythroid differentiation and apoptosis of human leukemia K562 cells and (b) globin gene expression in cultures of human erythroid progenitors derived from the peripheral blood. To prove the activity of a series of linear and angular furocoumarins derivs., we employed the human leukemia K562 cell line and the two-phase liquid culture procedure for growing erythroid progenitors. Quant. real-time reverse transcription polymerase-chain assay (Q-RT-PCR) was employed for quantification of the accumulation of globin mRNAs. The results obtained demonstrate that both linear and angular furocoumarins are strong inducers of erythroid differentiation of K562 cells. From a preliminary screening, we have selected two derivs., 5-methoxypsoralen (5-MOP) and trimethylangelicin (TMA), for which we have investigated their mechanism of action. The cell cycle anal. showed that these derivs. induce, after irradiation, a cell cycle arrest in the G2/M phase, followed by apoptosis. Mitochondrial depolarization and caspases activation seem to be involved in the mechanism of cell death. In erythroid precursor cells, psoralens in combination with UVA irradiation, stimulate at very low concns. a preferential increase of γ-globin mRNA. Altogether, these data suggest that psoralen derivs. warrant further evaluation as potential therapeutic drugs in β- thalassemia and sickle cell anemia.

REFERENCE COUNT: 59 THERE ARE 59 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1988:183297 CAPLUS
DOCUMENT NUMBER: 108:183297
ORIGINAL REFERENCE NO.: 108:30033a,30036a
TITLE: Method and kit for rapid detection of nucleic acid sequences in a sample by labeling the sample
INVENTOR(S): Dattagupta, Nanibhushan; Rae, Peter M. M.; Rabin, Daniel U.; Huguenel, Edward D.
PATENT ASSIGNEE(S): Molecular Diagnostics, Inc., USA
SOURCE: Eur. Pat. Appl., 29 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
EP 235726	A2	19870909	EP 1987-102577		19870224
EP 235726	A3	19890510			
EP 235726	B1	19930519			
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, NL, SE					
NO 8700613	A	19870907	NO 1987-613		19870217
CA 1295535	C	19920211	CA 1987-530235		19870220
AT 89606	T	19930615	AT 1987-102577		19870224
FI 8700923	A	19870906	FI 1987-923		19870303
DK 8701120	A	19870906	DK 1987-1120		19870304
ZA 8701554	A	19871230	ZA 1987-1554		19870304
AU 8769723	A	19870910	AU 1987-69723		19870305
AU 599083	B2	19900712			
JP 62265999	A	19871118	JP 1987-51169		19870305
CA 1314794	C	19930323	CA 1987-553597		19871204
US 5348855	A	19940920	US 1991-772625		19911004
PRIORITY APPLN. INFO.:			US 1986-836378	A	19860305
			US 1986-943006	A	19861229

EP 1987-102577 A 19870224
US 1987-24643 A 19870311

AB A method for detecting ≥1 microorganism or polynucleotide sequence from eukaryotic sources in a nucleic acid-containing sample comprises (a) labeling the nucleic acids in the test sample; (b) immobilizing an oligonucleotide or a single-stranded nucleic acid of ≥1 known microorganism or sequences from eukaryotic sources to make ≥1 probe; (c) contacting, under hybridization conditions, the labeled single-stranded sample nucleic acid and the immobilized probe to form a hybridized labeled nucleic acid; and (d) assaying for the hybridized nucleic acid by detecting the label. A kit comprises immobilized probe, reagent for labeling the sample nucleic acids, reagent for denaturing the nucleic acids, and hybridization reagents. Urine samples from patients with suspected urinary tract infections were centrifuged, treated with NaOH, and heated to 100° to lyse the cells. The suspension was diluted with Na borate buffer and neutralized to pH 7. Biotin-PEG-angelicin (preparation described) was added and the mixture was irradiated with a long-wavelength UV lamp for 15 min. The irradiated sample was added to hybridization reagents and hybridization was conducted with probes (whole genomic DNA of Escherichia coli, Klebsiella pneumoniae, Proteus vulgaris, etc.) immobilized onto nitrocellulose paper. Hybridization was detected by an immunogold assay with affinity-isolated goat anti-biotin antibody and Ag enhancement. A spot of human DNA was also present on the paper for detection of leukocytes.

L9 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:850726 CAPLUS
TITLE: Furocoumarins photolysis products induce differentiation of human erythroid cells
AUTHOR(S): Viola, Giampietro; Vedaldi, Daniela; Dall'Acqua, Francesco; Lampronti, Ilaria; Bianchi, Nicoletta; Zuccato, Cristina; Borgatti, Monica; Gambari, Roberto
CORPORATE SOURCE: Department of Pharmaceutical Sciences, University of Padova, Via Marzolo 5, University of Padova, Padua, 35131, Italy
SOURCE: Journal of Photochemistry and Photobiology, B: Biology (2008), 92(1), 24-28
CODEN: JPPBEG; ISSN: 1011-1344
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Psoralens, also known as furocoumarins, are a well-known class of photosensitizers largely used in the therapy of various skin disease. In this study we have evaluated the effects of crude pre-irradiated solns. of furocoumarins derivs. on (a) erythroid differentiation and apoptosis of human leukemic K562 cells and (b) Hb synthesis in cultures of human erythroid progenitors derived from the peripheral blood. To prove the activity of a mixture of photoproducts generated by UVA irradiation of the three psoralen derivs. 5-methoxypsoralen (5-MOP) 8-methoxypsoralen (8-MOP), and angelicin (ANG), we employed the human leukemic K562 cell line and the two-phase liquid culture procedure for growing erythroid progenitors. The results obtained demonstrate that pre-irradiated solns. of psoralen derivs. significantly induce erythroid differentiation of K562 cells irresp. of the type of derivative used, suggesting that the active photoproduct(s) share a common structure. Interestingly, solns. of psoralens irradiated in anaerobic conditions do not exhibits erythroid inducing ability, indicating that the effect is mostly due to photooxidized psoralen products. In erythroid precursor cells, psoralens photolysis products stimulates at low concns. an increase of Hb A and Hb F. Altogether, these data suggest that photoproducts of psoralen warrant further evaluation as potential therapeutic drugs in β- thalassemia and sickle cell anemia.

L9 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1988:164418 CAPLUS

DOCUMENT NUMBER: 108:164418
ORIGINAL REFERENCE NO.: 108:26955a,26958a
TITLE: Preparation and use of reagents for a single probe solution-phase hybridization assay for the detection of a nucleotide sequence, and kits containing the reagents
INVENTOR(S): Dattagupta, Nanibhushan
PATENT ASSIGNEE(S): Molecular Diagnostics, Inc., USA
SOURCE: Eur. Pat. Appl., 50 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 237833	A2	19870923	EP 1987-102576	19870224
EP 237833	A3	19910116		
EP 237833	B1	19930113		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, NL, SE				
CA 1290664	C	19911015	CA 1986-526423	19861229
NO 8700612	A	19870907	NO 1987-612	19870217
AT 84574	T	19930115	AT 1987-102576	19870224
ES 2053457	T3	19940801	ES 1987-102576	19870224
FI 8700922	A	19870906	FI 1987-922	19870303
DK 8701121	A	19870906	DK 1987-1121	19870304
ZA 8701555	A	19871125	ZA 1987-1555	19870304
AU 8769724	A	19870910	AU 1987-69724	19870305
JP 62282599	A	19871208	JP 1987-51170	19870305
US 4968602	A	19901106	US 1989-442423	19891121

PRIORITY APPLN. INFO.: US 1986-836360 A 19860305
US 1986-927613 A 19861114
EP 1987-102576 A 19870224

AB A particular nucleic acid sequence of clin. significance can be rapidly determined by a homogeneous single-probe hybridization assay. The test sample containing chemical modified nucleic acids having a label (or a reactive site) will hybridize with a nucleic acid probe carrying a reactive site (or a label). The hybrids are selectively separated out by contacting then with an immobilized reactive partner. The hybrid and the reactive partner form a stable bond, and the extent of hybridization can be measured by determining the label in the immobilized fraction or a decrease in the label in the remaining solution The homogeneous single-probe hybridization method, as described above was employed to detect the presence of α-thalassemia in prenatal samples (no data). The sample nucleic acid and the probe were labeled photochem. with biotin and 4'-aminomethyl-4,5' di-Me angelicin, resp.

L9 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1989:550062 CAPLUS
DOCUMENT NUMBER: 111:150062
ORIGINAL REFERENCE NO.: 111:24949a,24952a
TITLE: Nucleic acid sequence determination by hybridization probe and its use in the identification of microorganisms and prokaryotic or eukaryotic DNA and in clinical diagnosis
INVENTOR(S): Dattagupta, Nanibhushan; Rabin, Daniel; Rae, Peter; Huguenel, Edward
PATENT ASSIGNEE(S): Molecular Diagnostics, Inc., USA
SOURCE: Eur. Pat. Appl., 31 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 281927	A2	19880914	EP 1988-103221	19880303
EP 281927	A3	19910417		
EP 281927	B1	19950628		
R: CH, DE, ES, FR, GB, GR, IT, LI, NL, SE				
CA 1314794	C	19930323	CA 1987-553597	19871204
AU 8812151	A	19880915	AU 1988-12151	19880223
AU 601021	B2	19900830		
JP 63313598	A	19881221	JP 1988-56517	19880311
US 5348855	A	19940920	US 1991-772625	19911004
PRIORITY APPLN. INFO.:			US 1987-24643 A	19870311
			US 1986-836378 B2	19860305
			US 1986-943006 A	19861229

AB A method for the detection and identification of microorganisms or nucleic acid sequences in a test sample comprises: (1) labeling the nucleic acids in the sample, (2) contacting the labeled nucleic acids with ≥1 immobilized probe containing complementary nucleic acids under hybridization conditions, and (3) detecting the label. The labeling compound 4'-biotinyl-PEG-4,5'-dimethylangelicin (I) was prepared In α-thalassemia diagnosis, a test sample containing nucleic acid was dissolved in 10 mM borate buffer (pH 8.0) to a final concentration of .apprx.20 μg/mL. To the nucleic acid solution I in aqueous solution was added to a final concentration of 10 μg/mL. The mixture was then irradiated at long wavelength irradiation for .apprx.60 min using a black ray UVL 56 lamp. The labeled test sample was hybridized with probes immobilized on a nitrocellulose strip at 42° for 16 h and the biotinylated hybrids were detected by a colorimetric or chemiluminescence method.

L9 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:638196 CAPLUS
DOCUMENT NUMBER: 137:165813
TITLE: Methods and compositions for analyzing nucleic acids
INVENTOR(S): Dattagupta, Nanibhushan
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 15 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20020115074	A1	20020822	US 2001-791030	20010220
US 6620586	B2	20030916		
WO 2002070749	A2	20020912	WO 2002-US3782	20020205
WO 2002070749	A3	20070531		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, AP, EA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, EP, OA				

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     AU 2002311759         A1    20020919    AU 2002-311759          20020205
     US 20030211532        A1    20031113    US 2003-458606          20030609
PRIORITY APPLN. INFO.:                       US 2001-791030       A  20010220
                                             WO 2002-US3782       W  20020205
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AB The present invention relates to methods and compns. for analyzing nucleic acids. In particular, the invention provides for methods and combinations for analyzing nucleic acids in a plurality of samples using a plurality of detectably different signature labels and a probe that is hybridizable to each of the target nucleic acids. The invention also provides for a method for quantifying a nucleic acid by analyzing the amount of a label, e.g., a photoactivatable label, attached to the target nucleic acid.

L9 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

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ACCESSION NUMBER:         1992:56598  CAPLUS
DOCUMENT NUMBER:          116:56598
ORIGINAL REFERENCE NO.:   116:9751a,9754a
TITLE:                    Defective DNA endonuclease activities in Fanconi's
                          anemia cells, complementation groups A and B
AUTHOR(S):                Lambert, Muriel W.; Tsongalis, Gregory J.; Lambert, W.
                          Clark; Hang, Bo; Parrish, David D.
CORPORATE SOURCE:         New Jersey Med. Sch., UMDNJ, Newark, NJ, 07103, USA
SOURCE:                   Mutation Research, DNA Repair (1991), 273(1), 57-71
                          CODEN: MRDRBE; ISSN: 0921-8777
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
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AB Cells from patients with the inherited disorder, Fanconi's anemia (FA), were analyzed for endonucleases which recognize DNA interstrand cross-links and monoadducts produced by psoralen plus UVA irradiation Two chromatin-associated DNA endonuclease activities, defective in their ability to incise DNA-containing adducts produced by psoralen plus UVA light, have been identified and isolated in nuclei of FA cells. In FA complementation group A (FA-A) cells, one endonuclease activity, pI 4.6, which recognizes psoralen intercalation and interstrand cross-links, has 25% of the activity of the normal human endonuclease, pI 4.6, on 8-methoxypsoralen (8-MOP) plus UVA-damaged DNA. In FA complementation group B (FA-B) cells, a second endonuclease activity, pI 7.6, which recognizes psoralen monoadducts, has 50% and 55% of the activity, resp., of the corresponding normal endonuclease on 8-MOP or angelicin plus UVA-damaged DNA. Kinetic anal. reveals that both the FA-A endonuclease activity, pI 4.6, and the FA-B endonuclease activity, pI 7.6, have decreased affinity for psoralen plus UVA-damaged DNA. Both the normal and FA endonucleases showed .apprx.2.5-fold increase in activity on psoralen plus UVA-damaged reconstituted nucleosomal DNA compared to damaged non-nucleosomal DNA, indicating that interaction of these FA endonucleases with nucleosomal DNA is not impaired. These deficiencies in two nuclear DNA endonuclease activities from FA-A nd FA-B cells correlate with decreased levels of unscheduled DNA synthesis (UDS), in response to 8-MOP or angelicin plus UVA irradiation, in these cells in culture.

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L2            55 S ANGELICIN

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L8            10 S L6 AND L7
L9            10 FOCUS L8 1-

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L9   ANSWER 1 OF 10  CAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:         2004:120717  CAPLUS
DOCUMENT NUMBER:          140:157454
TITLE:                    Use of angelicin and its structural analogs
                          for the treatment of thalassemia
INVENTOR(S):              Bianchi, Nicoletta; Borgatti, Monica; Gambari,
                          Roberto; Lampronti, Ilaria
PATENT ASSIGNEE(S):       Universita' Degli Studi Di Ferrara, Italy;
                          Associazione Veneta Per La Lotta Alla Talassemia
SOURCE:                   PCT Int. Appl., 18 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.         DATE
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     WO 2004012729         A1    20040212    WO 2003-IB3462          20030730
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
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             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
             PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,
             TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
             KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
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             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
     AU 2003249472         A1    20040223    AU 2003-249472          20030730
     EP 1545506            A1    20050629    EP 2003-766580          20030730
     EP 1545506            B1    20080220
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
     AT 386513             T     20080315    AT 2003-766580          20030730
     US 20060111433        A1    20060525    US 2005-522737          20051012
PRIORITY APPLN. INFO.:                       IT 2002-TO684       A   20020731
                                             WO 2003-IB3462      W   20030730
AB   The invention describes the use of angelicin and its structural
     analogs for the preparation of a medicament for the therapeutic treatment of
     beta-thalassemia.  A structural analog which is particularly
     preferred for this purpose is bergapten.
IT   523-50-2, Angelicin 523-50-2D,
     Angelicin, analogs
     RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
     (Biological study); USES (Uses)
        (angelicin and structural analogs for treatment of
        thalassemia)
RN   523-50-2  CAPLUS
CN   2H-Furo[2,3-h]-1-benzopyran-2-one  (CA INDEX NAME)
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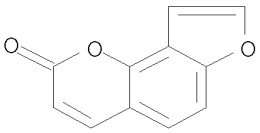
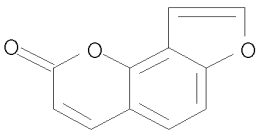


RN 523-50-2 CAPLUS
CN 2H-Furo[2,3-h]-1-benzopyran-2-one (CA INDEX NAME)



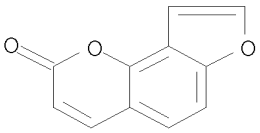
L9 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:177329 CAPLUS
DOCUMENT NUMBER: 148:345420
TITLE: Structure and biological activity of furocoumarins
AUTHOR(S): Gambari, Roberto; Lampronti, Ilaria; Bianchi, Nicoletta; Zuccato, Cristina; Viola, Giampietro; Vedaldi, Daniela; Dall'Acqua, Francesco
CORPORATE SOURCE: ER-GenTech, Department of Biochemistry and Molecular Biology, Section of Molecular Biology, University of Ferrara, Ferrara, 44100, Italy
SOURCE: Topics in Heterocyclic Chemistry (2007), 9(Bioactive Heterocycles III), 265-276
CODEN: THCOA6; ISSN: 1861-9282
PUBLISHER: Springer GmbH
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB In this review we summarize the structure and biol. effects of linear and angular psoralens. These compds. exhibit very interesting biol. effects on cell cycle, apoptosis and differentiation. These mols. should be considered as promising drugs in the therapy of several diseases, including psoriasis, mycosis fungoides, cancer. In addition, pre-clin. data demonstrate a possible employment of these mols. for the treatment of β- thalassemia.

L9 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:786184 CAPLUS
DOCUMENT NUMBER: 140:157093
TITLE: Accumulation of γ-globin mRNA in human erythroid cells treated with angelicin
AUTHOR(S): Lampronti, Ilaria; Bianchi, Nicoletta; Borgatti, Monica; Fibach, Eitan; Prus, Eugenia; Gambari, Roberto
CORPORATE SOURCE: Department of Biochemistry and Molecular Biology, University of Ferrara, Ferrara, Italy
SOURCE: European Journal of Haematology (2003), 71(3), 189-195
CODEN: EJHAEC; ISSN: 0902-4441
PUBLISHER: Blackwell Publishing Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The aim of the present study was to determine whether angelicin is able to increase the expression of γ-globin genes in human erythroid cells. Angelicin is structurally related to psoralens, a well-known chemical class of photosensitizers used for their antiproliferative activity in treatment of different skin diseases (i.e., psoriasis and vitiligo). To verify the activity of angelicin, we employed two exptl. cell systems, the human leukemic K562 cell line and the two-phase liquid culture of human erythroid progenitors isolated from

normal donors. The results of our investigation suggest that angelicin, compared with cytosine arabinoside, mithramycin and cisplatin, is a powerful inducer of erythroid differentiation and γ-globin mRNA accumulation of human leukemia K562 cells. In addition, when normal human erythroid precursors were cultured in the presence of angelicin, increases of γ-globin mRNA accumulation and fetal Hb (HbF) production, even higher than those obtained using hydroxyurea, were detected. These results could have practical relevance, as pharmacol.-mediated regulation of the expression of human γ-globin genes, leading to HbF induction, is considered a potential therapeutic approach in hematol. disorders, including β- thalassemia and sickle cell anemia.

IT 523-50-2, Angelicin
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(angelicin effect on γ-globin mRNA accumulation in human erythroid cells)

RN 523-50-2 CAPLUS
CN 2H-Furo[2,3-h]-1-benzopyran-2-one (CA INDEX NAME)



REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

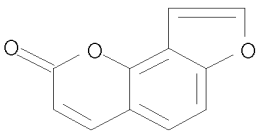
L9 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:158569 CAPLUS
DOCUMENT NUMBER: 148:397073
TITLE: Induction of γ-globin mRNA, erythroid differentiation and apoptosis in UVA-irradiated human erythroid cells in the presence of furocoumarin derivatives
AUTHOR(S): Viola, Giampietro; Vedaldi, Daniela; Dall'Acqua, Francesco; Fortunato, Elena; Basso, Giuseppe; Bianchi, Nicoletta; Zuccato, Cristina; Borgatti, Monica; Lampronti, Ilaria; Gambari, Roberto
CORPORATE SOURCE: Department of Pharmaceutical Sciences, University of Padova, Padua, 35131, Italy
SOURCE: Biochemical Pharmacology (2008), 75(4), 810-825
CODEN: BCPCA6; ISSN: 0006-2952
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Psoralens, also known as furocoumarins, are a class of photosensitizers largely used in the therapy of various skin diseases. In this study we have evaluated the combined effects of UVA irradiation and furocoumarins derivs. on (a) erythroid differentiation and apoptosis of human leukemia K562 cells and (b) globin gene expression in cultures of human erythroid progenitors derived from the peripheral blood. To prove the activity of a series of linear and angular furocoumarins derivs., we employed the human leukemia K562 cell line and the two-phase liquid culture procedure for growing erythroid progenitors. Quant. real-time reverse transcription polymerase-chain assay (Q-RT-PCR) was employed for quantification of the accumulation of globin mRNAs. The results obtained demonstrate that both linear and angular furocoumarins are strong inducers of erythroid differentiation of K562 cells. From a preliminary screening, we have selected two derivs., 5-methoxypsoralen (5-MOP) and trimethylangelicin (TMA), for which we have investigated their mechanism of action. The cell cycle anal. showed that these derivs. induce, after irradiation, a cell cycle

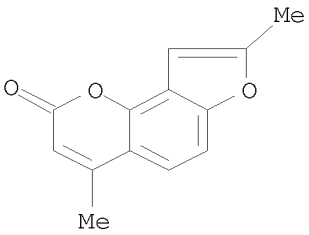
arrest in the G2/M phase, followed by apoptosis. Mitochondrial depolarization and caspases activation seem to be involved in the mechanism of cell death. In erythroid precursor cells, psoralens in combination with UVA irradiation, stimulate at very low concns. a preferential increase of γ-globin mRNA. Altogether, these data suggest that psoralen derivs. warrant further evaluation as potential therapeutic drugs in β- thalassemia and sickle cell anemia.

IT 523-50-2, Angelicin 4063-41-6
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(γ-globin mRNA, cell differentiation and apoptosis in UVA-irradiated human erythroid cells in presence of furocoumarin derivs.)

RN 523-50-2 CAPLUS
CN 2H-Furo[2,3-h]-1-benzopyran-2-one (CA INDEX NAME)



RN 4063-41-6 CAPLUS
CN 2H-Furo[2,3-h]-1-benzopyran-2-one, 4,8-dimethyl- (CA INDEX NAME)



REFERENCE COUNT: 59 THERE ARE 59 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1988:183297 CAPLUS
DOCUMENT NUMBER: 108:183297
ORIGINAL REFERENCE NO.: 108:30033a,30036a
TITLE: Method and kit for rapid detection of nucleic acid sequences in a sample by labeling the sample
INVENTOR(S): Dattagupta, Nanibhushan; Rae, Peter M. M.; Rabin, Daniel U.; Huguenel, Edward D.
PATENT ASSIGNEE(S): Molecular Diagnostics, Inc., USA
SOURCE: Eur. Pat. Appl., 29 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 235726	A2	19870909	EP 1987-102577	19870224
EP 235726	A3	19890510		
EP 235726	B1	19930519		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, NL, SE				
NO 8700613	A	19870907	NO 1987-613	19870217

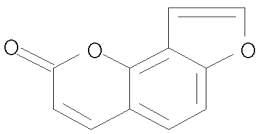
CA 1295535	C	19920211	CA 1987-530235		19870220
AT 89606	T	19930615	AT 1987-102577		19870224
FI 8700923	A	19870906	FI 1987-923		19870303
DK 8701120	A	19870906	DK 1987-1120		19870304
ZA 8701554	A	19871230	ZA 1987-1554		19870304
AU 8769723	A	19870910	AU 1987-69723		19870305
AU 599083	B2	19900712			
JP 62265999	A	19871118	JP 1987-51169		19870305
CA 1314794	C	19930323	CA 1987-553597		19871204
US 5348855	A	19940920	US 1991-772625		19911004
PRIORITY APPLN. INFO.:			US 1986-836378	A	19860305
			US 1986-943006	A	19861229
			EP 1987-102577	A	19870224
			US 1987-24643	A	19870311

AB A method for detecting ≥1 microorganism or polynucleotide sequence from eukaryotic sources in a nucleic acid-containing sample comprises (a) labeling the nucleic acids in the test sample; (b) immobilizing an oligonucleotide or a single-stranded nucleic acid of ≥1 known microorganism or sequences from eukaryotic sources to make ≥1 probe; (c) contacting, under hybridization conditions, the labeled single-stranded sample nucleic acid and the immobilized probe to form a hybridized labeled nucleic acid; and (d) assaying for the hybridized nucleic acid by detecting the label. A kit comprises immobilized probe, reagent for labeling the sample nucleic acids, reagent for denaturing the nucleic acids, and hybridization reagents. Urine samples from patients with suspected urinary tract infections were centrifuged, treated with NaOH, and heated to 100° to lyse the cells. The suspension was diluted with Na borate buffer and neutralized to pH 7. Biotin-PEG-angelicin (preparation described) was added and the mixture was irradiated with a long-wavelength UV lamp for 15 min. The irradiated sample was added to hybridization reagents and hybridization was conducted with probes (whole genomic DNA of Escherichia coli, Klebsiella pneumoniae, Proteus vulgaris, etc.) immobilized onto nitrocellulose paper. Hybridization was detected by an immunogold assay with affinity-isolated goat anti-biotin antibody and Ag enhancement. A spot of human DNA was also present on the paper for detection of leukocytes.

IT 523-50-2, Angelicin
RL: ANST (Analytical study)
(labeling of cellular DNA with)

RN 523-50-2 CAPLUS

CN 2H-Furo[2,3-h]-1-benzopyran-2-one (CA INDEX NAME)



L9 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2008:850726 CAPLUS

TITLE: Furocoumarins photolysis products induce differentiation of human erythroid cells

AUTHOR(S): Viola, Giampietro; Vedaldi, Daniela; Dall'Acqua, Francesco; Lampronti, Ilaria; Bianchi, Nicoletta; Zuccato, Cristina; Borgatti, Monica; Gambari, Roberto

CORPORATE SOURCE: Department of Pharmaceutical Sciences, University of Padova, Via Marzolo 5, University of Padova, Padua, 35131, Italy

SOURCE: Journal of Photochemistry and Photobiology, B: Biology (2008), 92(1), 24-28
CODEN: JPPBEG; ISSN: 1011-1344

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Psoralens, also known as furocoumarins, are a well-known class of photosensitizers largely used in the therapy of various skin disease. In this study we have evaluated the effects of crude pre-irradiated solns. of furocoumarins derivs. on (a) erythroid differentiation and apoptosis of human leukemic K562 cells and (b) Hb synthesis in cultures of human erythroid progenitors derived from the peripheral blood. To prove the activity of a mixture of photoproducts generated by UVA irradiation of the three psoralen derivs. 5-methoxypsoralen (5-MOP) 8-methoxypsoralen (8-MOP), and angelicin (ANG), we employed the human leukemic K562 cell line and the two-phase liquid culture procedure for growing erythroid progenitors. The results obtained demonstrate that pre-irradiated solns. of psoralen derivs. significantly induce erythroid differentiation of K562 cells irresp. of the type of derivative used, suggesting that the active photoproduct(s) share a common structure. Interestingly, solns. of psoralens irradiated in anaerobic conditions do not exhibits erythroid inducing ability, indicating that the effect is mostly due to photooxidized psoralen products. In erythroid precursor cells, psoralens photolysis products stimulates at low concns. an increase of Hb A and Hb F. Altogether, these data suggest that photoproducts of psoralen warrant further evaluation as potential therapeutic drugs in β- thalassemia and sickle cell anemia.

L9 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1988:164418 CAPLUS
DOCUMENT NUMBER: 108:164418
ORIGINAL REFERENCE NO.: 108:26955a,26958a
TITLE: Preparation and use of reagents for a single probe solution-phase hybridization assay for the detection of a nucleotide sequence, and kits containing the reagents
INVENTOR(S): Dattagupta, Nanibhushan
PATENT ASSIGNEE(S): Molecular Diagnostics, Inc., USA
SOURCE: Eur. Pat. Appl., 50 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 237833	A2	19870923	EP 1987-102576	19870224
EP 237833	A3	19910116		
EP 237833	B1	19930113		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, NL, SE				
CA 1290664	C	19911015	CA 1986-526423	19861229
NO 8700612	A	19870907	NO 1987-612	19870217
AT 84574	T	19930115	AT 1987-102576	19870224
ES 2053457	T3	19940801	ES 1987-102576	19870224
FI 8700922	A	19870906	FI 1987-922	19870303
DK 8701121	A	19870906	DK 1987-1121	19870304
ZA 8701555	A	19871125	ZA 1987-1555	19870304
AU 8769724	A	19870910	AU 1987-69724	19870305
JP 62282599	A	19871208	JP 1987-51170	19870305
US 4968602	A	19901106	US 1989-442423	19891121

PRIORITY APPLN. INFO.: US 1986-836360 A 19860305
US 1986-927613 A 19861114
EP 1987-102576 A 19870224

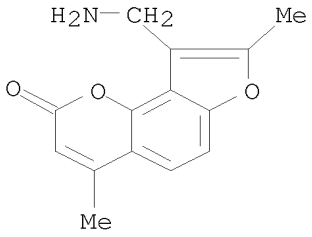
AB A particular nucleic acid sequence of clin. significance can be rapidly determined by a homogeneous single-probe hybridization assay. The test sample containing chemical modified nucleic acids having a label (or a reactive site) will hybridize with a nucleic acid probe carrying a reactive site (or a

label). The hybrids are selectively separated out by contacting then with an immobilized reactive partner. The hybrid and the reactive partner form a stable bond, and the extent of hybridization can be measured by determining the label in the immobilized fraction or a decrease in the label in the remaining solution The homogeneous single-probe hybridization method, as described above was employed to detect the presence of α-thalassemia in prenatal samples (no data). The sample nucleic acid and the probe were labeled photochem. with biotin and 4'-aminomethyl-4,5' di-Me angelicin, resp.

IT 80500-62-5P, 4'-Aminomethyl-4,5' dimethyl angelicin
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as hybridization probe)

RN 80500-62-5 CAPLUS

CN 2H-Furo[2,3-h]-1-benzopyran-2-one, 9-(aminomethyl)-4,8-dimethyl- (CA INDEX NAME)



L9 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1989:550062 CAPLUS
DOCUMENT NUMBER: 111:150062
ORIGINAL REFERENCE NO.: 111:24949a,24952a
TITLE: Nucleic acid sequence determination by hybridization probe and its use in the identification of microorganisms and prokaryotic or eukaryotic DNA and in clinical diagnosis
INVENTOR(S): Dattagupta, Nanibhushan; Rabin, Daniel; Rae, Peter; Huguenel, Edward
PATENT ASSIGNEE(S): Molecular Diagnostics, Inc., USA
SOURCE: Eur. Pat. Appl., 31 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 281927	A2	19880914	EP 1988-103221	19880303
EP 281927	A3	19910417		
EP 281927	B1	19950628		
R: CH, DE, ES, FR, GB, GR, IT, LI, NL, SE				
CA 1314794	C	19930323	CA 1987-553597	19871204
AU 8812151	A	19880915	AU 1988-12151	19880223
AU 601021	B2	19900830		
JP 63313598	A	19881221	JP 1988-56517	19880311
US 5348855	A	19940920	US 1991-772625	19911004
PRIORITY APPLN. INFO.:			US 1987-24643 A	19870311
			US 1986-836378 B2	19860305
			US 1986-943006 A	19861229

AB A method for the detection and identification of microorganisms or nucleic acid sequences in a test sample comprises: (1) labeling the nucleic acids in the sample, (2) contacting the labeled nucleic acids with ≥1

immobilized probe containing complementary nucleic acids under hybridization conditions, and (3) detecting the label. The labeling compound 4'-biotinyl-PEG-4,5'-dimethylangelicin (I) was prepared In α-thalassemia diagnosis, a test sample containing nucleic acid was dissolved in 10 mM borate buffer (pH 8.0) to a final concentration of .apprx.20 μg/mL. To the nucleic acid solution I in aqueous solution was added to a final concentration of 10 μg/mL. The mixture was then irradiated at long wavelength irradiation for .apprx.60 min using a black ray UVL 56 lamp. The labeled test sample was hybridized with probes immobilized on a nitrocellulose strip at 42° for 16 h and the biotinylated hybrids were detected by a colorimetric or chemiluminescence method.

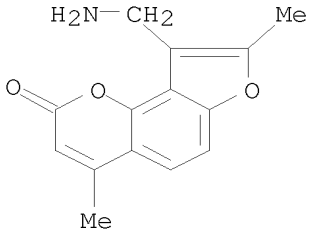
L9 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:638196 CAPLUS
DOCUMENT NUMBER: 137:165813
TITLE: Methods and compositions for analyzing nucleic acids
INVENTOR(S): Dattagupta, Nanibhushan
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 15 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20020115074	A1	20020822	US 2001-791030	20010220
US 6620586	B2	20030916		
WO 2002070749	A2	20020912	WO 2002-US3782	20020205
WO 2002070749	A3	20070531		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, AP, EA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, EP, OA				
AU 2002311759	A1	20020919	AU 2002-311759	20020205
US 20030211532	A1	20031113	US 2003-458606	20030609
PRIORITY APPLN. INFO.:			US 2001-791030 A	20010220
			WO 2002-US3782 W	20020205

AB The present invention relates to methods and compns. for analyzing nucleic acids. In particular, the invention provides for methods and combinations for analyzing nucleic acids in a plurality of samples using a plurality of detectably different signature labels and a probe that is hybridizable to each of the target nucleic acids. The invention also provides for a method for quantifying a nucleic acid by analyzing the amount of a label, e.g., a photoactivatable label, attached to the target nucleic acid.

IT 80500-62-5P, 4'-Aminomethyl-4,5'-dimethyl angelicin
RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)
(methods and compns. for analyzing nucleic acids)

RN 80500-62-5 CAPLUS
CN 2H-Furo[2,3-h]-1-benzopyran-2-one, 9-(aminomethyl)-4,8-dimethyl- (CA INDEX NAME)



L9 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1992:56598 CAPLUS
DOCUMENT NUMBER: 116:56598
ORIGINAL REFERENCE NO.: 116:9751a,9754a
TITLE: Defective DNA endonuclease activities in Fanconi's anemia cells, complementation groups A and B
AUTHOR(S): Lambert, Muriel W.; Tsongalis, Gregory J.; Lambert, W. Clark; Hang, Bo; Parrish, David D.
CORPORATE SOURCE: New Jersey Med. Sch., UMDNJ, Newark, NJ, 07103, USA
SOURCE: Mutation Research, DNA Repair (1991), 273(1), 57-71
CODEN: MRDRBE; ISSN: 0921-8777
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Cells from patients with the inherited disorder, Fanconi's anemia (FA), were analyzed for endonucleases which recognize DNA interstrand cross-links and monoadducts produced by psoralen plus UVA irradiation Two chromatin-associated DNA endonuclease activities, defective in their ability to incise DNA-containing adducts produced by psoralen plus UVA light, have been identified and isolated in nuclei of FA cells. In FA complementation group A (FA-A) cells, one endonuclease activity, pI 4.6, which recognizes psoralen intercalation and interstrand cross-links, has 25% of the activity of the normal human endonuclease, pI 4.6, on 8-methoxypsoralen (8-MOP) plus UVA-damaged DNA. In FA complementation group B (FA-B) cells, a second endonuclease activity, pI 7.6, which recognizes psoralen monoadducts, has 50% and 55% of the activity, resp., of the corresponding normal endonuclease on 8-MOP or angelicin plus UVA-damaged DNA. Kinetic anal. reveals that both the FA-A endonuclease activity, pI 4.6, and the FA-B endonuclease activity, pI 7.6, have decreased affinity for psoralen plus UVA-damaged DNA. Both the normal and FA endonucleases showed .apprx.2.5-fold increase in activity on psoralen plus UVA-damaged reconstituted nucleosomal DNA compared to damaged non-nucleosomal DNA, indicating that interaction of these FA endonucleases with nucleosomal DNA is not impaired. These deficiencies in two nuclear DNA endonuclease activities from FA-A nd FA-B cells correlate with decreased levels of unscheduled DNA synthesis (UDS), in response to 8-MOP or angelicin plus UVA irradiation, in these cells in culture.

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